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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,717	02/11/2004	Yoshiki Kino	1232-5283	2826
27123	7590	12/08/2005	EXAMINER	
MORGAN & FINNEGAN, L.L.P. 3 WORLD FINANCIAL CENTER NEW YORK, NY 10281-2101			GUTIERREZ, KEVIN C	
			ART UNIT	PAPER NUMBER
			2851	

DATE MAILED: 12/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/776,717	Applicant(s) KINO, YOSHIKI	
	Examiner Kevin Gutierrez	Art Unit 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 14, 16 and 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

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(canceled)). The claim listing shall commence on a separate sheet of the amendment document and the sheet(s) that contain the text of any part of the claims shall not contain any other part of the amendment.

(2) *When claim text with markings is required.* All claims being currently amended in an amendment paper shall be presented in the claim listing, indicate a status of "currently amended," and be submitted with markings to indicate the changes that have been made relative to the immediate prior version of the claims. The text of any added subject matter must be shown by underlining the added text. The text of any deleted matter must be shown by strike-through except that double brackets placed before and after the deleted characters may be used to show deletion of five or fewer consecutive characters. The text of any deleted subject matter must be shown by being placed within double brackets if strike-through cannot be easily perceived. Only claims having the status of "currently amended," or "withdrawn" if also being amended, shall include markings. If a withdrawn claim is currently amended, its status in the claim listing may be identified as "withdrawn—currently amended."

(3) *When claim text in clean version is required.* The text of all pending claims not being currently amended shall be presented in the claim listing in clean version, i.e., without any markings in the presentation of text. The presentation of a clean version of any claim having the status of "original," "withdrawn" or "previously presented" will constitute an assertion that it has not been changed relative to the immediate prior version, except to omit markings that may have been present in the immediate prior version of the claims of the status of "withdrawn" or "previously presented." Any claim added by amendment must be indicated with the status of "new" and presented in clean version, i.e., without any underlining.

(4) *When claim text shall not be presented; canceling a claim.*

(i) No claim text shall be presented for any claim in the claim listing with the status of "canceled" or "not entered."

(ii) Cancellation of a claim shall be effected by an instruction to cancel a particular claim number. Identifying the status of a claim in the claim listing as "canceled" will constitute an instruction to cancel the claim.

(5) *Reinstatement of previously canceled claim.* A claim which was previously canceled may be reinstated only by adding the claim as a "new" claim with a new claim number.

Claim Objections

3. Claim 9 is objected to because of the following informalities: Regarding the "interval" made "almost constant," it is unclear of what the constant interval value corresponds to. Appropriate correction is required.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Remarks (pages 7-10), filed November 7, 2005, with respect to the objection(s) of the specification and drawings and rejection(s) of claim(s) and under 35 USC § 102 and 103 have been fully considered and are persuasive. Therefore, the objection(s) and rejection(s) has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of a different interpretation of the previously applied reference.

Response to Amendment

2. The amendment to the claims filed on November 7, 2005 does not comply with the requirements of 37 CFR 1.121(c) because the indicated canceled claims (pages 4-5 claims 14, 16 and 18) are presented and listed as "Original." For a future reference, amendments to the claims filed on or after July 30, 2003 must comply with 37 CFR 1.121(c) which states:

(c) *Claims*. Amendments to a claim must be made by rewriting the entire claim with all changes (e.g., additions and deletions) as indicated in this subsection, except when the claim is being canceled. Each amendment document that includes a change to an existing claim, cancellation of an existing claim or addition of a new claim, must include a complete listing of all claims ever presented, including the text of all pending and withdrawn claims, in the application. The claim listing, including the text of the claims, in the amendment document will serve to replace all prior versions of the claims, in the application. In the claim listing, the status of every claim must be indicated after its claim number by using one of the following identifiers in a parenthetical expression: (Original), (Currently amended), (Canceled), (Withdrawn), (Previously presented), (New), and (Not entered).

(1) *Claim listing*. All of the claims presented in a claim listing shall be presented in ascending numerical order. Consecutive claims having the same status of "canceled" or "not entered" may be aggregated into one statement (e.g., Claims 1-5

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-5, 7-13, 15 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Miyajima (US 2005/0073663).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claim 1, Miyajima discloses

- "a cooling apparatus (fig. 3A, #23a-e and #24a-e and fig. 3B, #25a-f, are radiation plates, coolant pipes, and coolant), for use with an optical element (30) including a base (30, 32) having a reflecting surface to be illuminated by light ([0041], lines 8-9) and

- concave part opposite to the reflecting surface (fig. 3B, where a concave portion is the space between the lower flat surface of mirror 30 and radiation plates 25c-25f and surrounded by mirror support member 32), said cooling apparatus comprising

- a cooling mechanism (23-25c, 23-25d, 23-25e) located in the concave part of the optical element for cooling the optical element through radiation in a non-contact manner (fig. 3B, radiation plates 25c-f are located at a distances where they in non-contact with mirror 30 or mirror support member 32).”

Regarding claim 2, Miyajima discloses the limitations set forth in claim 1 and further discloses a cooling mechanism (23-25c, 23-25d, 23-25e), located in the first concave part, for cooling said base through radiation in a non-contact manner (fig. 3B, radiation plates 25c-f are located at a distances where they are not in contact with mirror 30).”

Regarding claim 3, Miyajima discloses “wherein the surface has an area to be illuminated, and the first concave part is located opposite to the area on the surface (see Fig. 3B, where the illuminated surface is the U-shaped surface of 30 illuminated by 2d and is opposite to the first concave part, which is formed by the lower surface of 30 and with the surrounding enclosure of 32).

Regarding claim 4, Miyajima discloses “a radiation plate (25c-f) provided opposite to the base (opposite of mirror 30 surface); and a Peltier element that cools the radiation plate ([0061], lines 11-12).”

Regarding claim 5, Miyajima discloses “wherein said cooling mechanism has a channel (fig. 3B, #23a-e) for coolant (fig. 3B, #24a-e) to flow, and further includes a cooling jacket for recovering heat from the Peltier element ([0040], lines 10-13).”

Regarding claims 7 and 8, Miyajima discloses wherein the base (30; mirror) has a second concave part (the upper U-shaped surface of mirror 30) to be illuminated

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and is provided at a position different from that of the first concave part in a non-illuminated area (see Fig. 3B, where exposure light 2d illuminates the U-shaped surface of mirror 30).

Regarding claim 9, Miyajima discloses “wherein an interval between the area to be illuminated and the first concave part is made almost constant ([0065], lines 7-10).”

Regarding claim 10, Miyajima discloses “wherein the first concave part has a shape that changes according to temperature distributions on the surface to be illuminated ([0037], lines 13-17, where temperature rise due to exposure causes displacement of surface).”

Regarding claim 11, Miyajima discloses “wherein the cooling mechanism changes cooling power based on a position according to temperature distributions on the surface to be illuminated ([0039], lines 2-4).”

Regarding claim 12, Miyajima discloses “further comprising a mirror (30).”

Regarding claim 13, Miyajima discloses

- “a detector (27a; thermometer) for detecting a temperature of said base (fig. 4, where a thermometer 27a is utilized for the temperature detection unit 27; and
- a controller (28) for controlling said cooling mechanism so that the temperature of said base detected by said detector becomes a predetermined value ([0043], lines 8-12).”

Regarding claims 15 and 17, Miyajima discloses the claimed limitations and further discloses “an exposure apparatus comprising an optical system for exposing a pattern formed on a mask or a reticle onto an object ([0002], lines 1-2 and lines 9-11)” and “developing the exposed object (fig. 12, step 4).”

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being obvious over Miyajima in view of Loopstra et al (US 20001/0013925).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention “by another”; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Miyajima discloses a cooling mechanism, but does not disclose a heat insulator to prevent the base from absorbing heat.

However, it would have been obvious “wherein said cooling mechanism further includes a heat insulator for preventing the base from absorbing heat obtained by the

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first concave part” as taught by Loopstra et al (fig. 4, #540 is a heat shield to prevent thermal load on to “WH” (substrate holder). Thus, it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the optical element of Miyajima by including a heat shield within the cooling mechanism, which would substantially surround the radiation plates 25c-f, for at least the purpose to maintain longer exposure intervals.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

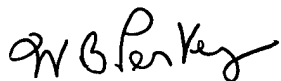
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Gutierrez whose telephone number is (571)-272-5922. The examiner can normally be reached on Monday-Friday: 7:30 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571)-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kevin Gutierrez
Examiner
Art Unit 2851

December 5, 2005

William Perkey
Primary Examiner